

Abstract

A method in the fabrication of a silicon-germanium mesa transistor in a semiconductor process flow comprises the steps of providing a p-type doped silicon bulk substrate (10) having an n⁺-type doped surface region (31) being a subcollector; depositing epitaxially thereon a silicon layer (41) comprising n-type dopant; depositing epitaxially thereon a silicon layer (174) comprising germanium and p-type dopant; forming in the epitaxial layers (41, 174) field isolation areas (81) around, in a horizontal plane, a portion of the epitaxial layers (41, 174) to simultaneously define an n-type doped collector region (41) on the subcollector (31); a p-type doped base region (174) thereon; and an n-type doped collector plug on the subcollector (31), but separated from the n-type doped collector region (41) and the p-type doped base region (174); and forming in the p-type doped base region (174) an n-type doped emitter region.